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ABSTRACT

This review of research and demonstration projects includes only those projects supported by the Research and Evaluation Office. No attempt is made to relate these projects or their findings to projects supported by other agencies or institutions. Further, this review excludes all national evaluation studies, i.e., those studies utilizing national samples on the basis of a national evaluation design. They are reported separately. Since the first research and demonstration funding during the summer of 1965, the categories of research and demonstration have tended to become the following: (1) Sub-population Characteristics: (a) Language, (b) Cognitive, Intellectual, and Achievement Behavior, (c) Social-emotional Behavior and Self-Concept; (2) Demonstration Programs; (3) Teacher Characteristics; (4) Parent Participation; (5) Head Start and the Community; and (6) Follow-up. (JL)

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REVIEW OF RESEARCH
1965 to 1969

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Prepared by:
PROJECT HEAD START

June 1969

REVIEW OF RESEARCH 1965 to 1969

Research and Evaluation Office
Project Head Start
Office of Economic Opportunity

Edith H. Grotberg, Ph.D.
Coordinator of Research

June 1969

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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June 1969

A Summary Statement

Review of Research 1965 to 1969
Research and Evaluation Office
Project Head Start

Edith H. Grotberg, Ph.D., Coordinator of Research

Because of the innovative and experimental nature of the Head Start Child Development Program, the Office of Economic Opportunity established a Research and Evaluation Office as an integral part of Project Head Start from its inception. This provided unprecendented opportunities to explore new approaches toward working with young children and their families.

This review of research and demonstration projects includes only those projects supported by the Research and Evaluation Office. No attempt is made to relate these projects or their findings to projects supported by other agencies or institutions. Further, this review excludes all national evaluation studies, i.e., those studies utilizing national samples on the basis of a national evaluation design. They are reported separately.

Since the first research and demonstration funding during the summer of 1965, the categories of research and demonstration have tended to become the following: (1) Sub-population Characteristics: (a) Language, (b) Cognitive, Intellectual, and Achievement Behavior, (c) Social-emotional Behavior and Self-Concept; (2) Demonstration Programs; (3) Teacher Characteristics; (4) Parent Participation; (5) Head Start and the Community; and (6) Follow-up.

Recognizing conceptual, methodological, logistical and interpretational problems of research which limit definitiveness of results, the following summaries of Head Start research findings are provided.

1. Sub-Population Characteristics

(a) Language - The studies in language of impoverished children suggest their language development is generally below that of middle class children. Environmental factors seem to account for a large portion of the difference; however, ethnicity may account for variations among impoverished sub-populations. One study found higher verbal performance among inner-city preschool boys than girls. The language behavior of the parents is a more reliable predictor of children's language behavior than socio-economic factors.

Experiments in language programs suggest that children benefit from many kinds of language interventions, but that a more structured program is generally more effective than an unstructured one.

(b) Cognitive, Intellectual, and Achievement Behavior - Children from low income families perform below middle class children in cognitive, intellectual, and achievement behavior. However, careful analyses of test items and use of various tests suggest wide variations in performance of sub-population groups. Use of teacher ratings to assess intelligence of disadvantaged children is limited by teacher biases.

These children are able to develop in cognitive, intellectual and achievement behavior as a result of Head Start programs, as a result of special training activities, and as a result of social reinforcement.

(c) Social-emotional Behavior and Self-Concept - Many Head Start children are inconsistent in their emotional relationships with adult figures, particularly at a dependency level. Further, they have a great deal of dependency conflict; i.e., difficulty in accepting dependency needs and in permitting themselves to turn to a protective environment for emotional and physical support. This dependency conflict affects intellectual performance increasingly with age. While these children vary in competitive and cooperative behaviors, they are able to apply the principle of cooperation to new situations when specifically taught the principle and the reasoning behind it. Children wo regard peers as friends are able to play more freely and explore new environments with greater interest and curiosity. Racial identification plays some part in self-concept but is not a major basis for selecting friends or classifying family members. The feeling that one's skill determines what one achieves rather than "luck" results in larger retention of learned behavior.

2. Demonstration Programs

Demonstration programs which experiment with special concepts in program elements seem to benefit Head Start children while they are in the program. However, when they leave the program they begin to level off or decline in measures of intelligence and achievement.

3. Teacher Characteristics

Teacher characteristics are important in determining the kinds of learning children acquire and, indeed, the kinds of social behaviors the children develop. While teachers are somewhat limited by their own biases in assessing children, their capacity to be resourceful, flexible, and supportive is important to the children's development.

Teachers' attitudes toward Head Start children may be changed positively as a result of teaching the children.

4. Parent Participation

Parents generally approve of Head Start and see its value for their children. Their involvement in Head Start ranges from a high degree of enthusiastic participation to a passive indifference with some element of suspicion. However, when parents who wish to participate in the

Head Start program are controlled, for research purposes, in the amount of participation time, significant differences result. The children of parents who have a high level of participation perform better on tests of achievement and development. In addition, parents who duplicate in the home the special learning activities in the classroom and who are trained in the teaching techniques, enhance the learning of their children more than parents teaching only in the home or with the learning activities confined to the classroom.

5. Head Start and the Community

Communities generally favored Head Start while expressing different views on ethnicity of teachers and the comparative merits and weakness of segregated and integrated Head Start classes. Variations in the use of Head Start auxiliary services generally affected the rural communities or groups that did not know about them. Housing was not a significant factor in children's performance while attendance in Head Start program was.

More recent studies are examining the relationships of Head Start personnel, professionals and community leaders. In one study paraprofessionals did not seem to be performing tasks they were engaged to perform and were at conflict with the professionals. In another study the professionals, parents, and community leaders confronted each other over a period of time and resolved much of their conflict so that they could work together to establish a diagnostic and treatment center for the benefit of Head Start children.

6. Follow-up

Whether children maintain their advantage after a Head Start experience seems to depend on length and type of program, appropriateness of learning experiences, and level of parent participation. The kinds of teachers involved with Head Start children during the experience and in grades subsequent to the Head Start experience also determine lasting effects of the program. It may well be that the improved training of teachers combined with improved Head Start programs and increased time in programs account for more recent findings that Head Start children do indeed function as middle class children in terms of learning readiness after a full year Head Start program.

More research is needed in each of the areas presented. In addition, research is needed in the area of health and nutrition. Studies are in progress and their results will be reported when available.

June 1969

Review of Research 1965 to 1969
Research and Evaluation Office
Project Head Start

Edith H. Grotberg, Ph.D., Coordinator of Research

Because of the innovative and experimental nature of the Head Start Child Development Program, the Office of Economic Opportunity established a Research and Evaluation Office as an integral part of Project Head Start from its inception. This provided unprecendented opportunities to explore new approaches toward working with young children and their families. The Office is charged with the responsibility to support research and evaluation activities that will contribute to the continued improvement of the program, will permit the knowledgeable appraisal of the program's status and impact, and will advance knowledge relative to practical and theoretical problems in helping the development of young children from impoverished backgrounds.

This review of research and demonstration projects includes only those projects supported by the Research and Evaluation Office. No attempt is made to relate these projects or their findings to projects supported by other agencies or institutions. Further, this review excludes all national evaluation studies, i.e., those studies utilizing national samples on basis of a national evaluation design. The national evaluation studies are reported separately.

Guidelines for Head Start Research and Demonstration

A panel of authorities on child development prepared for the Office of Economic Opportunity a report including a list of objectives for a comprehensive Head Start program. These seven objectives continue to guide the national program and the kinds of research and demonstration projects supported by the Head Start Research and Evaluation Office:

A. Improving the child's physical health and physical abilities
B. Helping the emotional and social development of the child by encouraging self-confidence, spontaneity, curisoity, and self-discipline
C. Improving the child's mental processes and skills with particular attention to conceptual and verbal skills
D. Establishing patterns and expectations of success for the child which will create a climate of confidence for his future learning efforts
E. Increasing the child's capacity to relate positively to family members and others while at the same time strengthening the family's ability to relate positively to the child and his problems

F. Developing in the child and his family a responsible attitude toward society, and fostering constructive opportunities for society to work together with the poor in solving their problems
G. Increasing the sense of dignity and self-worth within the child and his family

These broad general objectives provide adequate guidelines to identify pertinent research and demonstration projects which may aid in the achievement of the Head Start objectives. Since the first research and demonstration funding during the summer of 1965, the categories of research and demonstration have tended to fall into the following categories:

(1) Sub-population Characteristics
    (a) Language
    (b) Cognitive, Intellectual, and Achievement Behavior
    (c) Social-Emotional Behavior and Self-Concept
(2) Demonstration Programs
(3) Teacher Characteristics
(4) Parent Participation
(5) Head Start and the Community
(6) Follow-Up

Some of these areas have yielded more research findings than others and some have received more attention. The differences are due partly to varying interests of researchers, priority emphases from the Research and Evaluation Office, and problems general to the research field and specific to the Head Start program. Instrument development is treated in each section as appropriate. The review of Head Start research and demonstration projects is presented according to the six categores, following a statement of general and specific problems limiting or impeding definitive research findings.

Problems in Research

Project Head Start is a massive social experiment to explore ways of intervening into early developmental processes to improve the abilities, attitudes, health, and well-being of young children and their families. Like most experiments, Head Start was initiated on the basis of a set of general hypotheses based on prior knowledge and theory about human development, education, and relationships between early childhood experience and eventual adult behavior. Furthermore, since Head Start is an experiment, its planners did not expect total and unqualified success in attaining the program's objectives immediately. In any experiment, the first observations of experimental consequences do not afford an over-simplified choice between abandoning the experiment as a failure or perpetuating it rigidly as a success. Instead, discoveries serve to redirect efforts along alternative routes, to focus attention in new directions, to generate new ideas for further experimentation. Further, it would be unreasonable to expect immediate definitive answers about program alternatives and their success, since these answers must necessarily be preceded by investigations which establish the major dimensions of variation in people, programs, and consequences which need to be evaluated. Since more than forty years of research related to these basic questions have still not produced definitive answers (Hunt, 1961; Fuller, 1960; Sears&Dowley, 1963; Swift, 1964; and others), Head Start's research program cannot be expected to provide answers in just a few years. But there are several particular difficulties associated with the conduct of research on early childhood development and education which legitimately account for this relatively slow rate of progression. Some are essentially conceptual problems, associated with formulating clear ideas and theory and learning to ask the proper questions for research investigation. Others are methodological problems, associated with difficulties in measuring attributes of very young children and programs which deal with them. A third category of research difficulties might be labeled logistical problems, in that ideally planned investigations are often not feasible with "real" children, "real" families, and "real" educational programs. And, finally, in any kind of research there are interpretational problems which stem from the fact that data are not always unequivocal, and observations usually permit several alternative interpretations.

In terms of Head Start research the conceptual problems are aggravated by the fact the program is comprehensive and multi-dimensional, involving not only the whole child but his family and community as well. Further, the program is designed for both immediate and ultimate impact. Additional problems of concepualization relate to the limited knowledge available about the children and families whom Head Start serves as well as about elements of preschool education pertinent to promoting optimal development of children.

In terms of methodological problems, Head Start research includes varying sampling techniques, determine to a large extent by the kind of Head Start program involved in the research. For example, some research includes mainly four year olds, because the Head Start program on which the research design is based was pre-kindergarten, while other research involves mainly five year olds, because the particular program is pre-first grade. The recruitment practices of varying communities provided a range of children from the very hard core of the poor in some communities to Head Start Centers where the children just qualified for admission. Further, some communities did not seek out the children, relying instead on parent initiative, while others actively sought out the children. Another problem pertinet to research methodology was the limited availability of adequate measurement techniques. Distressingly little progress has been made toward developing standardized, reliable and valid measures of aspects other than intellectual ability during early childhood. Teachers ratings of child performance have been used extensively to compensate for the lack of measures. When a research design included a sample of parents, the problem of adequate measurement techniques and instruments again appeared and was tentatively resolved by the use of interview schedules. Thus the assessment of both children and parents was restricted by the limitations of adequate instruments.

The logistical problems were complicated by the need for permission to test children and their parents, the extended time periods necessary for testing, the difficulty of finding parents at home for interviewing, and some resistence on the part of parents as well as teachers to providing information required of the research design.

The interpretational problems occur because of different theoretical positions concerning child development, preschool education and community action. Further, different studies frequently produce different data and the sources of the differences are difficult to identify, again prompting differing interpretations.

Compounding these research problems was the newness of the Head Start program as a massive social experiment. Not only was relatively little known about details of program operation for any kind of children, but virtually nothing was known about programs for poor children. It has been necessary to develop a general foundation of knowledge from exploratory ventures prior to reaching a stage at which well-formulated questions for careful and specific research could be framed.

Research and demonstration supported by the Head Start Research and Evaluation Office reflect the attempts to clarify, define, and test more well-formulated research questions. This development is apparent when comparing the earlier studies with more recent ones.

The remainder of this document reviews research and demonstration activities and findings from projects supported by the Research and Evaluation Office of Project Head Start. The final reports from the initiation of Project Head Start in the summer of 1965 to all final reports received as of December 31, 1968, are included in the review. Other reports are in progress and many studies are continuing. These are not included, except for annual reports of the demonstrations which, by their very nature, are not terminal but rather developmental.

Sub-Population Characteristics

Language

Most research on language facility and performance of sub-populations is conducted with the continuing assumption that language development and ability are necessary for effective learning. Studies of sub-population variances in language, then, identify differences and/or deficiencies with the expectation that some corrective, developmental, or language intervention program will compensate for the deficiencies and minimize the differences that seem to impair learning.

Harry Osser (1968) began a series of studies during the summer of 1965 and completed them in the spring of 1968. He was interested in two problems of language. One was to study the language control and communication abilities of disadvantaged children and the other was to study the syntactic structures of five year old culturally deprived children. Both of these studies used middle class children as comparison groups.

In the early phases of the study on language control and communication abilities of disadvantaged children, Osser identified three tasks that seemed to measure language abilities. These were imitation of sentences heard, language production from the children, and comprehension of what was heard by giving correct responses. He found that length of produced sentence was negatively associated with the number of correct responses on the imitation task and that many disadvantaged children recoded sentences into their own dialect. Further, the length of sentence or production was not significantly related to number of correct responses on the comprehension tasks.

The results of this phase (1967) of the study lead to a refinement of the tasks and the elimination of the production task, since it was not predictive of successful performance on the other tasks. The two remaining tasks, then were comprehension measured by testing the control over 13 syntactic structures by matching pictures to the meaning of a sentence presented orally to the children, and imitation, measured by the child repeating a sentence presented to him orally.

Twenty Negro lower class and 20 white middle class children were tested with the white middle class children making significantly fewer errors in both tasks. Neither group made more errors in one task than the other, but there was greater consistency in the errors among the Negro children and not for the middle class children.

The early phases (1968) of the study on syntactic structures of five year old culturally deprived Negro and middle class white children were handicapped by the use of a developed test which did not seem sensitive to dialect variations. The Negro sample, however, showed a wide range of linguistic performance and those children producing an above average number of sentences showed a greater range of language structures and a high average sentence complexity score. After refining the test and the analyses techniques, which consisted mainly of minimizing dialect difference, Osser found that the white middle class children used many more syntactic structures than the culturally deprived Negro children. However, the Negro group was not homogeneous;

there was a wide range of difference in complexity and number of syntactic structures used. Osser suggests that the large differences within the Negro group may point out that environment plays a major role in language development.

Another study by George H. Friedlander conducted in 1965 attempted to describe the articulatory and intelligibility status of socially disadvantaged preschool children. One hundred fifth (150) four and a half to six year old Spanish-American, Negro and white children from three Head Start Centers were tested on the Templin-Darley Test of Articulation. An experimental test on daily vocabulary usage was also administered to twenty of the children. Thirty parents were given the Templin-Darley Test.

The Templin-Darley did not seem appropriate because: (a) the test items are not within the group vocabulary levels; or (b) pictorial and sentence cue stimulation are not geared to the population; or (c) the test requires verbal response to visual and auditory cues not within the performance level of these children. The experimental test tapped vocabulary used daily and may be more reliable.

In terms of intelligibility of articulation measured by the experimental test all groups of children reached a minimum standard. The foreign language of the Spanish group was not a significant factor in reaching the minimum standard. There were no significant differences in intelligibility between the Negro and white groups or between the Negro and Spanish groups. There were significant differences, however, between the Spanish and white.

The scores of the parents on the Templin-Darley Test were all sufficiently high in articulation to provide no serious negative influence on the children. Further, the occupation of the father and the family income were not significantly correlated with the children's articulation, intelligibility or verbal proficiency. Apparently the language behavior of the parents and not socio-economic status is the significant factor in language development of their children.

Vera John and Toni Berney (1967) explored the effect of ethnic content in stories by an analysis of story retelling by Negro, Indian and Spanish-American children. The population consisted of 46 Negro children, 22 Puerto Rican children, 10 Mexican children, 16 Sioux and 48 Navajo. Two-thirds were poor, the majority were five years old, and none had had any school experience. Tape recordings were used for quality and quantity analysis of speech on the story retelling test.

On the story retelling test, there were no significant differences between age, sex, and socio-economic background. Differences were significant along ethnic lines: 1) Indian children used fewer phrases than other groups, with the least number used by Navajoes and the most by Negroes; 2) Negro and Mexican children took longer to complete the task than the other groups; 3) Navajoes told the shortest stores; 4) many Puerto Rican children relied on Spanish and English to tell their stories; 5) there were also differences in cognitive style among the groups -- e.g., number of action phrases. The ethnic context of the story did not affect the verbal output or length of time for retelling, except that the Negro and Puerto Rican children tended to produce slightly longer stories when telling the Negro (city) version, and the Mexican children were more verbose in retelling the Indian version.

Ethnic differences in story retelling apparently are identifiable in five year old children. Further, the ethnic differences are more powerful than age, sex, or socio-economic background and apparently are strong determinants of sub-population differences.

Other early studies by Jane B. Raph (1965) and Donald Reiff (1966) pointed out the difficulties of developing a satisfactory methodology for obtaining and analyzing spontaneous verbalizations of Head Start children. Reiff suggested the development of observational techniques for collecting samples of verbal skills and language of Head Start children.

Kuno Beller (1967) used the Illinois Test of Psycholinguistic Ability on a population of disadvantaged preschool children entering a nursery program to determine their language development. He found these children were eight months behind in language development, with scores lowest on those tests measuring routine mastery of grammatical language usage and average to above average on those tests involving rote memory. Another descriptive study of language of urban inner city children, conducted by Theron Alexander (1968a) involved 52 girls and 66 boys. These children were given a picture vocabulary test on a pre-post full year Head Start basis. While both girls and boys made significant gains in vocabulary over the year, the boys earned significantly higher scores. Further, the relative difference between the girls and boys was maintained. This finding is contrary to most studies among middle class and white children where the girls have generally earned higher vocabulary scores.

A number of studies have been conducted to improve language performance of Head Start children.

Carolyn Stern conducted a study in 1967 in which she wanted to determine if four year old disadvantaged children would perform better on echoed or imitated sentence when presented in the speech characteristic of the community in which they were raised. An Echoic Response Inventory for children was developed and used to measure performance.

White children did significantly better on the test when the items were presented in standard English than when presented in dialect. There was no significant difference among the Negro children, suggesting that they do as well with standard English as with dialect. The authors had some conflicting results and felt the test was probably too difficult. In a later phase of this study, Stern compared the effectiveness of echoic and modeling procedures in language instruction with culturally disadvantaged children. She required one group to listen only during language sessions, another group to produce parallel sentences, and a third group only to echo the sentences heard. A fourth group had no language instruction which was part of this study.

All groups gained and while the girls had higher pretest scores than the boys, the boys made greater, though non-significant gains. The group required to listen to the model and the group required to produce parallel sentences made greater gains than the group required only to echo the sentences and the group receiving no special instructions. Again the differences were not significant.

William Parker (1968) was concerned with the influence of children with American speech and language proficiency on children with bi-lingual language background. The bi-lingual Head Start children were Mexican-American.

At the end of a six months Head Start program he found that all of the children improved significantly in language as measured by the ITPA. In examining sub-test differences, he concluded there was no advantage to be gained from emphasizing the use of Spanish in a mixed class, but that using English in a bi-lingual class is preferable.

Margaret Faust (1968) studies the feasibility of teaching preschool children the correct usage of the past tense. Groups were given stories using the past tense or participated in stories, drills, and games in which they produced sentences using the past tense correctly. Also the groups made significant gains in correct usage over children given no training.

Dorothy Adkins and colleagues (1968) developed a preschool language-oriented curriculum with a structured parent education program using eight experimental classes and eight classes using a variety of nursery techniques. The parent education program was introduced in half the experimental and half the comparison classes. All the children were in Head Start. The mothers were encouraged to assume a teaching role with their children and to strengthen the concepts conveyed in the classroom. The original parent plan had to be altered because of excessive absences and a lack of group cohesiveness. The results did not show significant differences between the experimental and the comparison groups in the PPVT or the School Readiness Test. It was felt that a readiness test needs to be developed which is more consistent with the contents of the language curriculum. However, this procedure would reflect language program and no special language program. Parent involvement did not make a significant difference in children's performance in this study.

Shuell Jones (1968) studied the effects of using the Sullivan programmed instruction on the school and reading readiness and letter identification of Head Start children. He used the Lee Clark Readiness Tests, the Murphy-Durrell Reading Analysis, and the Gates Reading Readiness Tests on a pre-post basis. The findings showed a significant mean gains of the experimental group in letter symbols, letter names, and the entire Murphy-Durrell Reading Readiness Analysis. The control group on the other hand, had significantly higher mean gains in word symbols, learning rate, picture directions, and rhyming.

During the summer of 1967 Bruce Rusk studied the impact of a six weeks Bereiter-Englemann structured curriculum on 8 classes of 15 children in each class compared with 8 classes of 15 children in each comparison group who were in relatively unstructured programs. All of the children were in Head Start classes and were tested using the Caldwell Preschool Inventory as well as the Englemann Concept Inventory. The children in the Bereiter-Englemann program made greater but not significant gains than the comparison group, but it must be remembered that the Englemann Concept Inventory is related to the Bereiter-Englemann program and therefore may well reflect what was taught.

Dorothy Adkins and Ian Reid (1968) also tested the impact of the Bereiter-Englemann language curriculum but modified it by moving more slowly through the curriculum and requiring less disciplined behavior from the children. The Head Start children in this group were compared with Head Start children in a verbal enrichment group. There were no significant differences in language performance between the groups.

In summary - the studies on language of disadvantaged children suggest that their language development is generally below that of middle class children. Environmental factors seem to account for a large portion of the difference; however, ethnicity may account for variations among sub-populations. One study found higher verbal performance among inner-city preschool boys than girls. Foreign language speaking parents and bilingual children do not appear to be handicapped in terms of intelligibility and articulatory status of their language performance. Further, the language behavior of the parents is a more reliable predictor of children's language behavior than socio-economic factors. Some of the studies are concerned with problems of instrumentation for measurement of language and attempted to develop and define instruments as part of their research. Experiments in language programs suggest that children benefit from many kinds of language interventions, but that a more structured program is generally more effective than an unstructured one; when significant gains are found, they tend to be found as a result of a more structured curriculum.

Cognitive, Intellectual, and Achievement Behavior

Cognitive, intellectual development, and achievement behavior are recognized as important predictors of academic success. To the degree that Head Start states as one of its goals, the readiness of children for future experience, e.g., the school, attention needs to be given to those behaviors related to such future success. A sizeable number of research projects have been concerned with the cognitive, intellectual, and achievement behavior of disadvantaged children.

Irving Sigel (1966) conducted a study to determine the relationship between cognitive competence and level of symbolization among five year old Head Start and middle class children. He found that socio-economic level determined the relationship and not the impact of a summer Head Start experience. Then he tested all the children six to eight months after the summer experience for the Head Start children. Head Start did not have much of an impact on the children. They were not significantly better in the Peabody Picture Vocabulary Test than their controls and were significantly below their middle class counterparts. In terms of categorizing behavior, the lower class children are more inclined to use color than form and have not established consistent patterns of classification. However, they were more spontaneous in responding than their middle class counterparts.

Another study concerning categorization behavior was conducted after Head Start had been in operation for three years and the full year program was instituted. Charles MacSpellman (1968) looked at the differences among ethnic groups of Head Start children in terms of shift from color to form preference as a concept for categorization behavior. He compared 5 and 6 year old Head Start children from Anglo, Negro and Indian ethnic background with control groups made up of children eligible but not enrolled in Head Start. He found that the Head Start children showed a steady increase in form responses throughout the school year while the non-Head Start children did not. Negro Head Start children shifted from color to form much slower than Anglo and Indian school children. The improved Head Start program from the summer of 1965 and the impact of a full year Head Start program may both account for the different findings of MacSpellman from Sigel.

Kuno Beller (1967) tests the intellectual functioning of lower class children and middle class children over a period of years using the Stanford-Binet, the Draw-A-Man test, and the PPVT. He consistently found that lower class children performed below middle class children on intellectual tasks whether in nursery, kindergarten or first grade. The degree of poor performance of the lower class children varied from test to test. The greatest variation occurred on the Stanford-Binet with the least variation on the Draw-A-Man test. Herbert Zimiles and Stephen Silk (1968) compared item-content and sub-test analyses of the New York State Readiness Test performance by middle class white children with lower class Negro and Puerto Rican children at the beginning of first grade. The smallest differences in the high and low scoring groups occurred on the listening, matching, and copying sub-tests, while the greatest difference occurred on the numbers sub-test. There were, however, pervasive differences found in every area of intellectual functioning between the middle class and the lower class children.

There has been serious question about the accuracy of available tests as predictors of achievement among disadvantaged children and, indeed some questions about their relevance. Robert Hess and Virginia Shipman (1967b) looked at many tests and used them as predictors of early school achievement. They found that for Head Start children, the Stanford-Binet and the Preschool Inventory were the two best predictors of success in the academic tasks in kindergarten. While these two tests are apparently relatively sensitive to changes, the Draw-A-Person test, Harris, 1963, is not (Eisenberg, et.al., 1966). The Peabody Picture Vocabulary Test has been criticized as anxiety provoking (Cline, Marshall and Stansbury, 1966) and the first form of the Illinois Test of Psycholinguistic Abilities has been criticized as relatively difficult for Head Start children (Cawley, 1966).

Virginia Shipman (1967) selected four existing tests to compare the use of alternative modes for assessing the cognitive development in bilingual or non-English speaking children from a disadvantaged or disparate cultural background. Twenty-eight American Indian children from two Head Start centers were administered the Ravens Colored Matrices, a test which purports to assess a child's present capacity for intellectual activity using a minimum of verbal items. In addition she used three Piagetian measures designed to assess a child's stage of concrete operation, two measures of classification behavior (class inclusion and object sorting), and the Stanford-Binet.

The Ravens Colored Matrices was found to be a good predictor of Indian children's functioning on other tasks. The Stanford-Binet showed the Indian children to be deficient in intellectual ability and to perform below normative levels on the Piagetian measures. On the soring tasks they scored below urban Negro children who had taken the same test.

The tendency to use teacher rating as a source for estimating intelligence and school readiness has been seriously questioned by Monica Holmes and others (1968). Their study asked the question: Do middle class teachers rank highly those pupils whose behaviors resemble middle class behavior? Four year old Head Start, middle class and upper middle class children comprised the study population. The children were administered a standardized IQ test and readiness test. Two observation scales provided descriptions of the children's behavior. The investigators found that indeed the middle class teachers perceived Head Start children whose behavior closely resembled middle class behavior as brighter, while the actual intelligence differences refuted this misperception. Further, the study stated it is not possible to predict correctly intelligence and school readiness of Head Start children from different types of behavior patterns.

Many attempts have been made to construct tests which will more sensitively measure cognitive, intellectual and achievement behavior of disadvantaged children. Thus, Herbert Zimiles and Harvey Asch (1967) developed a Matrix Test to assess cognitive skills associated with inferential reasoning. They found the Matrix Test is a useful tool for obtaining data relevant to the early education of disadvantaged children and are refining the test. Also Margery Franklin and Judith Cobb (1967) have developed a test to gather data on non-verbal behavior in young children. Four year olds are presented with test items organized around (1) play situations, (2) imitations, (3) spatial arrangements, and (4) picture-object matching. The test may be used to compare disadvantaged children with advantaged children but does yield information about meaningful and measurable behavior of disadvantaged children at a non-verbal level.

Recognizing that achievement behavior is comprised of more than high test scores, Dorothy Adkins and Bonnie Baillif (1968) developed a test to assess the motivation of preschool children to achieve. They found the following behaviors among those most important for identifying motivation to achieve: (1) individual initiative and pursuance of achievement; (2) a view of the self as an achiever; (3) ethnic evaluations of the self as an achiever; and (4) an affectively positive motivation toward achievement in school.

Renato Espinosa (1968) examined an 8 weeks summer Head Start program to determine if it would significantly change achievement motivation behavior when such behaviors of the children were rewarded or reinforced. He found that both Mexican-American and Negro children made gains in achievement motivation as a result of Head Start, but found the behavior was largely one of avoiding failure. In terms of reward patterns, the more structured and systematic reinforcement practices seemed most effective.

An important question to be asked concerning the cognitive, intellectual and achievement behavior of Head Start children is: How much can Head Start programs contribute to such development? Theron Alexander (1968b) found that a full year Head Start program which was geared to include cognitive development brought about significant gains in the IQ of the children. Thirty-five Negro boys and 33 Negro girls from an urban area tested significantly below the mean of 100 at the beginning of the school year on the Stanford-Binet test, (IQ 92.8), and slightly above standard at the end of the year, (IQ 101.7). The boys tended to make greater gains than the girls, but not significant and the greatest gains were made by initial low scorers. Margaret Faust (1968) also compared pre- and post- Stanford-Binet scores on children who were in a full year Head Start. Twenty-two children had an average IQ of 89.7 at the beginning of the year and at the end of the year the average IQ was 100.4. This was not only a significant gains but the final IQ reflected the national norm for the Stanford-Binet.

Kuno Beller (1968d) in a pilot study conducted with lower class Negro children attending nursery, kindergarten, and first grade, found that the learning of cognitive tasks is more effective with extrinsic social reward than intrinsic non-social reinforcement. However, the effectiveness of intrinsic reinforcement on cognitive learning and performance in kindergarten children was found to be greater in those children who attended nursery than in those children who entered kindergarten without prior schooling. Since a major goal of independent learning is to minimize the need for extrinsic social reinformcement and maximize the intrinsic non-social reinforcement, the contribution of the nursery experience on this development is noteworthy.

Social reinforcement was examined by Melvy Berke and Edward E. Johnson (1968) as it relates to time discrimination learning among Head Start children. Comparing Head Start children who had been in the program not more than three months with those in it not less than ten months, they found that a relatively consistent, supportive, nurturing environment; i.e., socially and extrinsically reinforcing, lead to the development of better time discrimination learning. Both Head Start groups were superior to their non- Head Start counterparts in performance on time discrimination tasks.

Egon Mermelstein and Edwina Meyer (1967) found one test, the Piagetian conservation of substance concept, which did not vary among sub-populations even when various training techniques were used. The main effect of time was significant; i.e., with time, improvement in the concept of conservation of substance occurs. This concept is apparently linked to development rather than training and is not enhanced with training. Edward C. Caldwell and Vernon C. Hall (1968) did find, however, that concepts of same and different in discrimination tasks could be taught provided the **task is** adequately analyzed and the required steps in the learning procedure are implemented. These researchers found additionally (1968) that nursery children will perform as well as second graders when the nursery children are given warm-up and feedback on a task designed to produce a concept of same and different. The variations in training technique may account for the different findings of this study with that of Mermelstein.

William Rohwer (1968) found that while lower income Negro children scored significantly below middle class white children on the Raven Progressive Matrices and Peabody Picture Vocabulary Test, they performed equally as well on a Paired Association Test constructed by the researcher when a particular method of presentation of material was used. Thus, presenting two pictures and verbalizing their names to lower income Negro children will yield similar results as with middle class white children when the children are tested on recall of the learned pairs.

In summary - disadvantaged children perform below middle class children in cognitive, intellectual, and achievement behavior. However, careful analyses of test items and use of various tests suggest wide variations in performance of sub-population groups. Use of teacher ratings to assess intelligence of disadvantaged children is limited by teacher biases. More reliable methods seem to be through the development of new tests and the selection of existing tests which are sensitive to sub-population variations.

Disadvantaged children are able to develop in cognitive, intellectual and achievement behavior as a result of Head Start programs, as a result of special training activites, and as a result of social reinforcement.

Social-Emotional Behavior and Self-Concept

Closely associated with cognitive, intellectual, and achievement behavior are the social-emotional behaviors and self-concept of children. A basic assumption about child development is that children's learning is enhanced when they are happy, relate well to others, and have a positive self-image. Some of the studies presented here are concerned with testing this assumption, while others attempt more to describe differences among children, and still others are concerned with training effects.

Caroline Fish and others (1967) compared two groups of children, one from an inner city Head Start class and one from a middle class suburban preschool program, diagnosed as having marginal emotional disorders. The findings indicated that social class differences in pathology were not striking. Lynn Dorman (1967) looked at expressions of aggression in preschool children and found that children who express more aggression on projective tests are more verbal and cooperative. There was a very low correlation between ratings of aggression on tests and teacher's ranking of such behavior based on classroom conduct. Another study, however, using a scale of assertion developed by Kuno Beller, found a positive correlation between scores on the assertion scale, which was administered by the teachers and an observer, and cognitive performance and intelligence as measured by the Stanford-Binet. In this study, Lynn Dorman and Freda Rebelsky (1968), the correlation of teacher ratings for assertion and the observer ratings were significant. The teachers seemed to be able to assess children more accurately when using a structured scale than when relying on unstructured observations.

Kuno Beller (1967) looked at emotional dependency of young children with adult figures, a relationship determined to be important for learning. He found that in contrast to middle class children there is very little consistency in lower class children in their manifestiation of emotional dependency; this is particularly true for boys. Also the lower class children show no inner consistency in regard to taking the initiative, persisting, and completing what has been initiated. Only the area of aggression shows the same amount of internal consistency as in middle class children.

Many lower class children have a dependency conflict, i.e., difficulty in accepting dependency needs and in permitting themselves to turn to a protective environment for emotional and physical support. The more dependency conflict, the more impaired is the child in his autonomous achievement striving or in his self-sufficiency. He also has difficulty in controlling his aggression. Further, children who have a dependency conflict score lower on the Stanford-Binet, the Draw-A-Man Test, and the Peabody Picture Vocabulary Test than children who do not have such a conflict.

In a later study, Beller (1968b) examined the effects of nurturance deprivation, i.e., deficiences in attention, care and positive social interaction of adults with their children, on problem solving behavior of children. The population consisted of 200 Negro first grade boys from slum area schools. These boys were rated on level of background nurturance deprivation. The experiment consisted of the tester chatting with the child on the way to the test room and then ignoring the child while presumably answering a phone call. After a predetermined number of minutes (5,10,15 or 20), she initiated a problem-solving learning

learning task. The results indicated that children who had a background of nurturance deprivation performed better on the problem-solving task after a maximum number of minutes (20) of having been ignored by the tester. Apparently the desire for attention of these children was greatly enhanced so that when the tester provided attention by initiating a problem-solving learning task, the children were eager to perform.

Millard Madsen (1967) looked at aggressive behavior more in terms of competition and has conducted a number of studies identifying sub-cultural determinants of cooperative and competitive behavior. Comparing such behavior among Mexican-American, Negro and white children he found that the white children are most competitive, with the Mexican-American middle competitive and the Negro least competitive. He also found the Negro children to be most cooperative, the white children to be middle cooperative, and the Mexican-American children to be least cooperative. All of these relationships were significant. One other significant fact was that Mexican-American boys were less competitive than Mexican-American girls and than both Negro boys and girls. In a later study, Madsen and Linden Nelsen (1968a) examined cooperation and competition in four year olds as a function of reward contingency and sub-culture. He paired 72 children who played a game which required cooperative interaction in order to get prizes. When it was possible for both subjects to get prizes on every trial, interaction was cooperative. When only one child could get a prize, interaction was most frequently of a domination-submission variety and often the pairs were so competitive that neither received a prize. However, some pairs reacted to the limitation of reward with a cooperative, taking-turns interaction. The children seemed to be highly responsive to the cue of limited reward and relatively insensitive to both the necessity of mutual assistance and the possibility of sharing by taking-turns. None of the differences between Negro and Casuasian pairs approached significance.

In a third study Masden and Nelsen (1968b) attempted to modify social interaction in five year olds by training experimental groups via reinforcement paradigms: modeling, rule conformity, or cooperation. Only in the cooperation training paradigm was a reason for taking turns to win a prize pointed out to the children. The results indicated that the cooperation training group differed significantly from the other groups in mean scores on taking turns. No other differences were significant. Further, children whose training on the first day was based on principles of cooperation were more cooperative in their interaction in a new situation on the second day than were children trained by other methods. The interpretation of the results suggests that being reinforced for taking turns or observing models taking turns, or learning a label for taking turns while being reinforced for it, was not sufficient training to result in transfer of the interaction pattern to new and somewhat different games. The five year olds in the cooperation group were, however, capable of learning the concept that prizes could be obtained only by taking turns and could apply it to new situations.

A study conducted by Howard Rosenfeld (1967) placed Head Start children in paris with middle class children. The pairs were required to complete a series of puzzles in which each subject was given some of the pieces his partner needed. Middle class children were more successful and their success was a function of their greater output of task-relevant behaviors. However, when two Head Start children were put together they increased their rates of relevant behavior, but lost this gain when returned to the middle class partners. Brad Manning, John Pierce-Jones, and Rhona Parelman (1968) also examined cooperative and competitive behavior among different ethnic groups. They placed 5 and 6 year old Head Start children of different or similar ethnic groups in a two person game situation where they could be cooperative of competitive. The findings indicated that girls in similar ethnic paris cooperated significantly more than dissimilar ethnic paris, with the exception of the Mexican-American and Negro pairs, who maintained a high level of cooperation. The girls of the three ethnic groups differed significantly in amount of cooperative behavior, with the Anglo competing the most. There were no significant differences found among the boys. Further, cooperative behavior was not affected by the type of reinforcement used, immediate or delayed nor did it increase as a function of trials.

Another facet of effects of peer relationships and interactions was examined by J. Conrad Schwartz (1968). He hypothesized that the proximity of an attached (friendly and known) peer would have a security inducing effect in showing greater comfort, greater mobility, and more verbal communication that the proximity of a strange peer. This hypothesis was supported. Further, he tested whether or not the nursery school children in the friend situation would score higher on indices of security than children who had no close peer, and found they scored higher. Finally he determined that children in the friend situation played longer with new toys and less time with familiar toys than children either in the stranger situation or alone. A feeling of security apparently is fostered by placing pre-school children with friendly known peers. Since this feeling of security enhances comfort ratings, mobility, verbalization, and strength of preference for novel toys, its value is obvious for contributing to desirable conditions for learning.

A number of pilot studies under the supervision of Margaret Faust (1968) concern social-emotional variables affecting behavior of Head Start children. One study focused on young children's recognition by skin color differences. The children were provided opportunities to make choices and identify with figures based on self-identification, identification of family members or friends. Both Negro and Anglo children participated. While they consistently selected the appropriate colored doll to represent themselves, indicating they have some awareness of differences in skin color, it was not a major basis for classifying family members nor for selecting friends.

In a second pilot study Faust compared the levels of social participation in free play situations among four year old disadvantaged and middle class children. In examining the amount of time spent in unoccupied behavior, solitary play, onlooker behavior, parallel play, associative play or cooperative, organized play, the disadvantaged children engaged primarily in solitary or parallel play, while the middle class children engaged primarily in parallel and associative play with a significant number engaging in cooperative play. The play behavior of the disadvantaged child, according to these classifications, was more immature and underdeveloped than that of the advantaged child.

Faust also compared social interaction of preschool children in two Head Start Centers and found that during a full year Head Start program children increased in the number of verbal contacts initiated toward adults and peers but this did not reach statistical significance. However, there was a highly significant increase in the number of verbal responses made by children who had been contacted by adults or peers. This very likely reflects the increased verbal competence which the children gained during the year.

Several studies have examined self-perception. One conducted by John Stabler and Edward Johnson (1968a) presented racially related stimuli to white and Negro Head Start children. They found that while there were no racial differences in matching assorted objects with a painted smiling face or a frowning face, both groups of children tended to guess that negatively-evaluated objects were in the black box and positively-evaluated objects were in the white box. This effect was more evident for the white children. A second study conducted by Stabler and Johnson (1968b) examined differences in behavior of preschool children who perceive reinforcement as contingет on their behavior versus perceiving reinforcement as contingent on chance or "luck". The results indicated that the perception that reinforcement depends upon luck leads to the usual partial reinforcement effect; i.e., retention of learned behavior is longer if it was learned with periodic reinforcement. However, a perception that reinforcement depends upon skill leads to an inverse result; i.e., greater resistence to extrication after continuous reinforcement than after partial reinforcement.

Patricia Minuchin (1968) assessed the processes of curiosity and exploration behavior in preschool disadvantaged children as these relate to self-image. She developed special measures to make the assessment and, in addition, both observed the children in the classroom and obtained teacher rankings of the children. She found that while the disadvantaged children were not as advanced as middle class children, they did divide into more and less developed groups. Those children with more active exploratory behavior were more coherent, had more positive self-images and had a more adequate concept formation.

John Pierce-Jones and others (1968) were concerned about changing the self-perception of culturally deprived preschool children primarily of Mexican-American ethnicity. They posited that two important influences on self-perception are interprersonal relationships and the physical environment. They placed 39 of the 70 children in groups of four with an untrained mother and the remainder in a regular Head Start class for six weeks. It was predicted that all would demonstrate increased self-perception while the children in the 4-1 ratio would have more significant change in the accuracy of the self-perception. A Doll-Self Point taks and the Draw-A-Person Test were administered. The findings indicated that all improved in self-perception; however, the children in the 4-1 ratio showed significantly greater increases in self-drawing scores.

In summary - Head Start children do not have emotional pathology that is different from middle class children, but are inconsistent in their emotional relationships with adult figures, particulary at a dependency level. Further, they have a great deal of dependency conflict; i.e., difficulty in accepting dependency needs and in permitting themselves to turn to a protective environment for emotional and physical support. This dependency conflict affects intellectual performance increasingly with age. However, children who have a history of lack of attention and nurturance deprivation perform better in some learning tasks when the deprivation condition is temporarily revived.

While children vary in competitive and cooperative behaviors, they are able to apply the principle of cooperativeness to new situations when specifically taught the principle and the reasoning behind it. Children who regard peers as friends are able to play more freely and explore new environments with greater interest and curiosity. Racial identification plays some part in self-concept but is not a major basis for selecting friends or classifying family members. The feeling that one's skill determines what one achieves rather than "luck" results in longer retention of learned behavior. Thus, as children develop more autonomy of personality they are able to relate better to others and to perform better in activities. Some of the research reported indicates that children are able to learn those things which are important to the development of autonomy.

Demonstration Programs

A number of demonstration programs have received some support from the Head Start Research and Evaluation Office to demonstrate various ways to aid in the development of impoverished preschool children.

The Early Training Project (DARCEE)

Susan Gray (1967) reported on a five year intervention study conducted at George Peabody College for Teachers. The study began in 1962 with a population of 61 Negro children born in 1958. The children were selected further on basis of poor housing, low educational level of parents, and generally unskilled labor by parents.

From the group of 61 children, three groups were constituted by randomization. The first of these (T1) was to attend over a period of three summers a ten week preschool particularly designed to attempt to offset the deficit usually observed in children from culturally deprived homes when they enter public school. In addition this group was to have three years of weekly contacts with the home visitor during the parts of the year in which the school was not in session. The second group (T2) was to receive two summers of special experiences plus two years of contacts with the home visitor. A third group (T3) became the local control group. Because of the somewhat ghetto-like concentration of Negroes in this community, it was decided to introduce a fourth group (T4) which would also serve as a control group, but which was located in a similar city 60 miles distant and which would not have any interaction with the experimental groups. This second control group made possible some study of diffusion effects among children and parents living in proximity to the experimental children. Attrition was slight over the years of the study.

The general program provided for the children centered around two broad classes of variables: (1) attitudes relating to school-type achievement; and (2) aptitudes relating to such achievement. To promote attitudes relating to school-type success the program provided experiences to develop achievement motivation, persistence, delay in gratification, interest in school-type activities, and identification with achieving role models. To promote aptitudes to achieve, the program provided experiences in perceptual development, concept formation and language development.

The Home Visitor program was added to provide some continuing supportive activity during the forty-two weeks of the year the children were not in the special program.

Each of the two experimental groups was provided with a home visitor during the periods that they were actively involved in the project. This was from June 1962 through August 1964 for the T1 group, and June 1963 through August, 1964 for the T2 group. In addition to this, a more limited contact was maintained with the homes with one home visitor for both groups from September 1964 through May 1965, the first year that the project children were enrolled in elementary school.

The home visitor, who worked with the T1 group for the first two years and with both groups the final year, was a certified elementary school teacher specializing in early childhood and primary education, and with extensive training in sociology. She was a respected member of her community who had demonstrated her ability to communicate well with individuals on all social levels. The second home visitor, who worked with the T2 group for their first year intervention, was a certified teacher with a major in home economics, but with extensive training in child development and primary education.

During the 10-week summer period the home visitor served as an active liaison between school and home. In her continuing contacts with the parents she attempted to keep them informed concerning the activities taking place in school. She arranged for parents to visit the school in groups of two or three, introduced the parents to the school staff, interpreted the activities taking place, and explained the objectives of the intervention program.

In addition to explaining the school activities to the parents, the home visitor also suggested some things the parents might do in response to the children's communications concerning activities in the school. The children were encouraged to tell the parents about what was taking place in the school. Paintings and construction work made by children and instructional aides used by the teachers were sent home with the children. The home visitor emphasized to the parents the importance of making an interested, encouraging, and reinforcing response to the reports and materials the children brought from school. From September through May weekly contacts of 45 minutes were scheduled with the parents for these discussions.

The impact of the program on intelligence as measured by the Stanford-Binet tends to favor the T1 group, or the group receiving the earliest and maximum exposure to the program which began with the summer school program in June 1962 and continued through to the termination of the home visitor contacts, in May 1965. Thus, the T1 group had an IQ of 87.6 prior to the program, May 1962, and by August 1962, had an IQ of 102. At the end of the program, August 1965, the IQ was 98.1. At the end of the first year out of the program, the IQ dropped to 91.2. The T2 group began with an IQ of 92.5 prior to the program, May 1962 and retained that same IQ in August 1962. This group did not begin the special program until the second summer 1963. In August 1963 the IQ was 97.5 and after a year out of the program the IQ was 96.0. This suggests that the T1 group, which received earlier and longer exposure to the training program, made the most improvement, which persisted while the children were in the program. The T2 group, starting their training a year later, did not show the same relative improvement in performance, nor did they regress as much after the termination of the program possibly because they did not have as much to lose. The general family superiority of T2 may also have contributed to this finding. The T1 and T2 groups consistently performed better than the control groups after the experimental treatment began.

Institute for Developmental Studies

The Institute for Developmental Studies under the Directorship of Martin Deutsch has been involved in compensatory education for disadvantaged children for many years.

The major effort of the Institute for Developmental Studies is directed toward its enrichment program which is designed to bring to young children a curriculum aimed at preventing and/or alleviating some of the detrimental effects of living in a disadvantaged environment. This project has five basic elements: curriculum development, training of teaching and supervisory personnel, demonstration, evaluation, and research.

For the past five years, the Institute has been developing special curricula for young children, from pre-kindergarten through third grade, which are taught by Institute-trained teaching personnel. The demonstration aspects of the program are housed in classrooms assigned to the Institute within selected schools of the New York City public school system. Evaluation of the program consists not only of assessment of the children's progress over time, but also includes the testing and evaluation of the curriculum elements themselves, and observation of the teacher as she performs in the classroom. Some curriculum elements may be evaluated through special research studies while other investigations of various aspects of young children's development are undertaken in order to make the newly developed curriculum germane to the needs of the children. During the past two years an extensive parent program has been added so that the impact of parent participation and parent education may be assessed.

The experimental population is comprised of children who volunteer for the program and who enter the program at the pre-kindergarten level and continue through third grade. The control children who attend the same public schools as the experimentals, fall into three main categories. C_{ss} or self-selected controls meet the same criteria as the experimentals but are excluded from the enrichment program on a random basis. C_k or control kindergarten children come from the same background as the other two groups but begin their formal schooling at the kindergarten level in regular non-enriched public school classes. Hence C_{ss} and C_k groups are identical in educational experience except the C_{ss} children volunteered for the IDS program and C_k children did not. C_1 children come from the same background but do not begin school until first grade in regular non-enriched public school classes.

The demonstration program began in 1962, when the first group (or wave) of experimental children entered the classes at prekindergarten. Since then, six succeeding waves have begun the enrichment program, making a total of seven waves from 1962 to 1968 and providing for a sizable population of experimental children.

The data analysis discussed here includes information only on four waves of entering children (1962-'63, '63-64, '64-65, '65-66) from the nursery year through the first grade. With only two exceptions, analyses of second- and third-grade data have not been included here, since they necessarily would be based on fewer than four replications and therefore, would not be comparable to the first grade data.

Experimental group (E) subjects were given the Stanford-Binet, Form L-M (1960) and the Peabody Picture Vocabulary Test on three occasions: prior to entering pre-kindergarten, following pre-kindergarten and following kindergarten. Self-selected control group children (C_{ss}) were similarly tested, with the only procedural variation being the timing of the first posttest: for the Css group it occurred just before the kindergarten year, rather than following pre-kindergarten (i.e., in August or early September, rather than in May or June of the same year). C_k children were tested prior to kindergarten and following kindergarten. C_1 children were tested prior to first grade.

Analysis shows E and C_{ss} groups to be equivalent on both instruments at pretest. Following pre-kindergarten, however, highly significant differences between the groups were obtained on both instruments, favoring the E group which had had a year of enrichment. The second post-testing (following kindergarten) also yields this sizeable difference in favor of the E group. The mean Stanford-Binet IQ score of the E group places the children at the same average level for all children at that age.

Following first grade, children were given the Lorge-Thorndike group intelligence test. Results again showed a significant difference among subject groups, with the E group showing the highest mean performance.

From time to time, additional evaluation measures were used. One of these is the nationally standardized Reading Prognosis Test (a kind of reading readiness test) which was developed at IDS to predict end-of-first-grade reading performance. It is given at the end of kindergarten. Again, when this test was administered to the groups under consideration here, the E group was significantly superior to the control groups. The Illinois Test of Psycholinguistic Abilities was given to the first wave of E and C_{ss} subjects three times: at the beginning of first, second and third grades. Findings were that there was a significant and increasing difference between the groups, year by year. This year (1968-69), six subtests of the new ITPA were given to a sample of first, second and third graders of E and C_k groups. The two groups were significantly different from each other with the E group being clearly superior.

These findings clearly demonstrate that continuous and carefully planned intervention procedures can have a substantially positive influence on the performance of disadvantaged children and avoid the cumulative failure all too frequently found. It should be kept in mind that these data do not, for the most part, go beyond first grade. In the case of the Stanford-Binet and the Peabody Picture Vocabulary Test, only two years of enrichment were sufficient to produce very significant differences.

Future analysis, which will involve the full five-year program on a large enough sample of children to make comparisons meaningful, should demonstrate the effects of intervention even more clearly. Included in such analysis will be reading achievement comparisons as well as data from the evaluation instruments already mentioned.

Learning to Learn School

Herbert Sprigle (1966) developed a sequential program of guided learning experiences for Head Start children. The program is based on motor, perceptual, and symbolic developmental tasks and has the following objectives:

(1) to stimulate intellectual development
(2) to reduce the complexities of problem solving, reasoning by classification and association, concept and symbol formation, spatial relationships, decision making, and an

understanding of numbers by means of games
(3) to replace the expositing method of teaching by establishing a game atmosphere
(4) develop motivation and appropriate attitudes
(5) develop coping behavior

Vernon Van de Riet (1967) evaluated the effectiveness of the Sprigle program comparing children in this program with a matched traditional nursery group and a no education group. The Sprigle group performed better than the other two groups at the end of the preschool experience on the Stanford-Binet, PPVT, Bender-Gestalt, ITPA, and Metropolitan Reading Readiness Test the traditional group tested significantly higher than the no education groups. By the end of the first grade, however, while the Sprigle children performed significantly better than the no education group, the differences between the traditional group and the no education group had begun to disappear. The children with any preschool education, nevertheless, were superior academically to children without such experience. The groups were rated similarly by the teachers on ability to get along with others and overall discipline. Thus providing some evidence that cognitive development does not have to occur at the expense of social and emotional adjustment.

The Juniper Gardens Parent Cooperative Nursery

The Juniper Gardens Parent Cooperative Nursery began operation in September 1967. (R.L. Schiefelbusch, 1968). Thirty poverty area children and their mothers were enrolled. The mothers participated actively in the parent-training program which resulted in modifications of their teaching behaviors. The training program consisted primarily of tutorial training in which a series of individual lessons designed to teach pre-academic concepts and skills were presented to the children by the mothers, and classroom management in which group activities were designed to allow mothers to learn to manage pupils and to provide good social learning experiences in group situations.

The tutorial curriculum consisted of 150 lessons which cover the pre-academic and primer level skills noramlly emphasized in preschool and kindergarten. The lessons were taught on a one-to-one mother and child basis. A major requirement was to teach the mothers to praise the children for correct responses. It was found that praise could be increased by giving the mother feedback by turning on a light whenever she correctly praised a child for making a correct response.

Classroom management was improved by having the mothers organize the classroom into activity areas and requiring the children to use a switching system to move around. This meant the children could not change from one activity area to another without stopping at a central point to do a switching task with a parent before going to another activity area.

The effectiveness of the program and techniques is reflected in the children's test results on the Peabody Picture Vocabulary Test. This was given before school started in September and again during the last month of the full year program. The children showed an average gain of 23.5 IQ points and a 22 months increase in mental age. Every child showed a net gain in IQ while the range of IQ points was changed from 23 to 92 in September and from 53 to 115 in June. These gains are probably somewhat inflated since the children were tested before any classroom experience.

Higher initial scores are usually earned when children have been in a Head Start program for even one week.

The New Nursery School

Glen Nimnicht, et.al. (1967) reported on two years of a demonstration program at the New Nursery School. Thirty children each year who were Spanish-American and Mexican-American participated in the program. These children were three and four years old.

The objectives of the New Nursery School are: (1) to develop a positive self-image; (2) to increase sensory and perceptual activity; (3) to improve language ability; and (4) to improve problem-solving and concept formation abilities.

The entire school is organized as an autotelic responsive environment. An autotelic activity is one done for its own sake rather than for obtaining rewards or avoiding punishment that have no inherent connection with the activity itself. A responsive environment satisfies the following conditions: (1) it permits the learner to explore freely; (2) it informs the learner immediately about the consequences of his actions; (3) it is self-pacing, i.e., events happen within the environment at a rate determined by the learner; (4) it permits the learner to make full use of his capacity for discovering relations of various kinds; and (5) its structure is such that the learner is likely to make a series of interconnected discoveries about the physical, cultural, or social world.

The teachers are part of the responsive environment and therefore respond to the child. Teachers do not teach; they facilitate children's learning. Teachers do not initiate conversation but encourage child initiated conversation. They avoid asking a child to give up one activity to do something else and never insist that any child come to a group activity.

The findings indicate that children who remain in the program for two years perform more like middle class children on tests than children in the program for only one year. However, children in the program for one year earn significantly higher scores on the Metropolitan Reading Readiness Tests than comparable children who had not been in the program. These findings are particularly significant since the MRRT was administered one year after the children had left the New Nursery School.

On follow-up of children, it was found that children who had been in the New Nursery School one year only began to level off in their rate of growth during first grade. There are no findings available yet on children who remained in the program for two years.

The programs presented here have as their major focus the demonstration of a total program. Other programs include a demonstration component and are reported in the appropriate sections of this report. Thus, special language programs such as the Bereiter-Englemann, the Sullivan, and special teaching techniques are presented in the section on Language under Sub-Population Characteristics. Special programs that include demonstrations of kinds of parent involvement pertinent to child development are reported in the section on Parent Involvement. Still other programs concerned with demonstrating procedures for the development of cognitive, intellectual and achievement behavior as well as social-emotional and self-concept development appear under the section on Sub-Population Characteristics.

In summary - demonstration programs, especially the large scale programs, seem to benefit children while they are in the program. However, when they leave the program they begin to decline in measures of intelligence and achievement. The problem of transition to other programs without loss of rate of growth is one needing serious and concentrated attention. How can rate of growth be maintained?

Teacher Characteristics

Children in the Head Start program have generally been placed in classrooms with adult figures. Some research has utilized other combinations but the general pattern has been fifteen children in a classroom with one teacher and at least one aide. The use of the word "teacher" may be misleading, since it implies a kind of foraml learning situation characteristic of schools. To the degree, however, that the Head Start experiences include readiness for learning, the use of the word "teacher" to designate the person responsible directly or indirectly for these experiences is appropriate.

From the very beginning of Head Start researchers have looked at teachers to describe their characteristics, to determine the effects teachers have on children, to determine significant factors in teacher behaviors and attitudes, and to identify and measure teacher-pupil interactions.

Robert Hess (1966) identified the characteristics of teachers at two Head Start Centers to determine the significant of these for the children. At Center A the teachers had an average age of 36 and a mean of 9.5 years of teaching experience. These teachers focused on general characteristics and developmental needs of young children, and perceived the goal of the Head Start program as aiding children in the area of social facility. At Center B the teachers had an average age of 27 and had a mean of 3.5 years of teaching experiences. These teachers focused on the nature of disadvantaged children and perceived the goals of Head Start being more tailored toward school demands.

While there were no significant differences between these two groups in terms of Head Start children's readiness for kindergarten, Group A was able to evaluate and predict the children's achievement more accurately than Group B. In general, however, previous experience with preschool and/or disadvantaged children increased the teacher's ability to predict the children's achievement. Monica Holmes, et.al. (1968), however, found in their studies that teacher bias could influence incorrectly the teachers evaluation and prediction of intelligence and achievement of Head Start children. They found that teachers tended to perceive Head Start children who behaved more like middle class children as more intelligent and higher achievers than actually showed test scores.

Swen Helge and John Pierce-Jones (1968) followed-up 145 female teachers in the spring of 1967 who had been Head Start teachers since the 1965 summer Head Start program. The teachers came primarily from lower middle class families. The researchers were interested in determining the relationship between kinds of teaching experiences before teaching Head Start children and the attitudes of the teachers toward Project Head Start.

The results of analysis of an Autobiographical and Experience Form, developed at the University of Texas, indicated that teachers with more general teaching experience, i.e., taught different grades and subjects prior to Head Start, held more stable and positive attitudes toward Project Head Start. Further, teachers who had taught a specific grade or subject for more than six years or had not taught at all before Head Start also held more stable and positive attitudes toward Project Head Start. Teachers who had many years of teaching experience of any kind had greater insight into problem areas and could more easily incorporate new experiences with the culturally deprived.

Elmer Van Egmond, et.al. (1966) selected 8 teachers to achieve maximum representation on such variables as experience and training, public school and agency centers, space, equipment, and teaching style. During the last three weeks of the summer 1966 program each teacher was visited in her classroom to collect the following types of data: (1) a 30-minute tape recording of the verbal interaction of the teacher and pupils during an instructional sequence; (2) diagrams of the location of children and adults in the classroom at 10 minute intervals during the taping period; (3) rotation of the equipment and facilities; (4) a copy of the teacher's plan book or log; and (5) an interview with each of the teachers.

The findings indicated that there was no evidence that the Head Start programs were different from pre-school programs whose general purpose is that of preparing children for kindergarten or first grade entrance. Teacher variance did not seem to affect the general structure of the program, which consisted of activities to prepare children for kindergarten or first grade classrooms. The teachers did recognize that culturally and economically deprived children presented unique learning and social needs. However, none of the teachers seemed able to plan and carry out general or differentiated program activities designed to meet particular learning or social needs. Further, few of the teachers involved parents in any aspect of the program.

While teacher variance did not seem to affect the general structure of the Head Start program in Van Egmond's study, another study shows a change in perceptions of teachers who participated in a Head Start program.

First grade teachers who had participated in the summer 1965 Head Start program were compared with first grade teachers who had not participated to determine if the Head Start experience altered perceptions of children. John Pierce-Jones, et.al. (1966) determined that teacher participation in the summer program did indeed affect their perceptions. Thus, former Head Start teachers nominated Head Start children significantly more often as good learners than first grade teachers selected Head Start children more often as having intellectual curiosity. There were no significant differences in the teachers' tendency to name Head Start children relative to non-Head Start children as potential educational failures.

The impact of teachers on the measured performance of Head Start children has concerned many researchers and has lead to further identification and anlaysis of specific teacher characteristics which seem responsible for changes in children's performance.

Leon Eisenberg, et.al. (1966) studies the effects of teacher behavior on the verbal IQ of Head Start children. Thirty-eight Head Start teachers were observed by four different observers over a four day period. Three hundred seventy-nine Head Start children were administered the PPVT and DAP on a pre-post basis to determine teachers' effect. The teachers were scored on communication, management, and encouragement, and were given a high, medium or low rating accordingly.

The most significant findings were as follows: (1) teachers rated high on communication produced significantly more positive changes in the PPVT (IQ) scores of their pupils; (2) teachers high on encouragement produced significantly less IQ growth in their pupils than those teachers with moderate amounts of encouragement; (3) teachers who moderately valued self-confidence and self-concept improvement in children produced significantly more IQ growth in their students than those teachers who place high degrees of emphasis on this value; (4) teachers who highly value intellectual activity produced significantly more growth in the IQ of their students; (5) teachers who placed high value on property rights and care of materials produced significantly less IQ growth than teachers who were medium or low on this value; and (6) teachers rated as warm, active, permissive and varied in their activities produced more IQ growth than teachers who rated low on these characteristics.

Two facts emerge from this study relevant to increasing intellectual performance of children: (1) teachers who stress cognitive and intellectual activities tend to develop these skills in children; and (2) teachers who are warm and varied in activities tend to develop the cognitive and intellectual performance of children. Since the study did not measure social-emotional gains in the children, it cannot be determined if such gains were fostered by the supportive encouraging teacher, nor if the children taught respect for property learned this. The single dependent variable was IQ.

Howard Lamb, et.al. (1965) studies the effect of teacher's cognitive style on Head Start children's self-esteem and self-other relationships. The teacher's cognitive style was classified as abstract or concrete through analyses of the Essay Problem Test, developed by Lamb. (Defined below). Children were administered on a pre-post basis the Self-Social Symbols tasks to determine effect of the abstract or concrete teacher. The results of the study indicated that generally students of abstract and complex teachers gained in self-esteem, identified more closely with mother, developed a more balanced power perception of teacher and police figures and perceived themselves as similar to others. The converse held for those students of concrete and less complex teacher.

Teachers were also differentiated on the basis of a general attitude toward the poor and expressed perceptions of disliked students. The study suggested that those students who deviate from the middle class norm are more sensitive to teacher attitudes. Males in general seem more affected by teacher attitudes, and Negro males in particular. Under teachers with less positive attitudes toward the poor and perceptions of disliked students, these boys tended to identify less closely with teachers, and a more defiant attitude toward authority figures and were lower in self-esteem.

Misha Prather (1967) continued in the vein of Lamb concerning abstract and concrete teachers. She built on an earlier finding that preschool teachers of concrete and abstract belief systems differed markedly in the classroom enviornments they created for their students. She conducted her study on kindergarten or first grade teachers with at least one pupil who had attended Head Start nine months earlier, i.e., summer, 1966. The characteristics of abstract as compared to concrete teachers provided a base for cluster analysis.

Teachers identified as being abstract, i.e., having an abstract belief system, expressed greater warmth toward children, showed greater perceptiveness of the children's wishes and needs, were more flexible in meeting the interests and needs of the children, were more encouraging of individual responsibility, gave greater encouragement to free expression of feeling, were more encouraging of creativity, displayed greater ingenuity in improving teaching and play materials, invoked unexplained rules less frequently, were less rule oriented, were less determining of classroom and playground procedure, mainfested less need for structure, were less punitive, and were less anxious about being observed than teachers identified as concrete, i.e., having a concrete belief system. A cluster analysis of these dimensions yielded the three behavioral factors of resourcefulness, dictatorialness, and punitiveness. Abstract teachers were more resourceful. less dictatorial and less punitive than concrete teachers.

An examination of the influence of teachers' beliefs and behavior upon the learning and performance of children assessed specifically the relationship between pupils' performance and teachers' resourcefulness, dictatorialness and punitiveness. The classes of these teachers were rated on seven factors: (1) cooperation; (2) involvement; (3) activity level; (4) nutrient seeking; (5) achievement level; (6) helpfulness; and (7) concreteness of response. Each teacher and her pupils were observed by trained observers in the classroom on a single occasion for approximately two hours.

The results provided the following: (1) students of more abstract teachers, in comparison with their counterparts, were significantly more involved in classroom activities, more active, higher in achievement, and less concrete in their responses. They were also less nutrient seeking; were cooperative and more helpful, but not significantly more than students of concrete teachers; (2) the resourcefulness of the teacher correlated significantly positively with student cooperation, involvement, and activity, and significantly negatively with the concreteness of students responses; and (3) the teachers' dictatorialness and punitiveness each correlated significantly negatively with student cooperation, involvement, activity, achievement, and helpfulness, and significantly positively with students concreteness of responses. One rather pertinent observation is that only about eight percent of teachers are abstract and resourceful according to test results, and these are the teachers who have the best results from children.

Kuno Beller (1968d) analyzed a series of scales for the measurement of teaching style and found two separate factors: One factor consists of social or interpersonal teacher behavior while the second factor deals with curriculum-oriented teacher behavior. These scales were subjected to two validity tests, one involving external criteria and the other predictive validity. The first validity test suggests that these scales might be useful for the selection of teachers. The second test indicated that the items dealing with curriculum-oriented teacher behavior might be useful in measuring the effectiveness of teaching on the performance of pupils on cognitive learning tasks under intrinsic, or non-social, reinforcement.

One study experimented with the use of middle class mother-teachers to determine their effectiveness on Head Start children. Pierce-Jones, et.al. (1968) used non-pedagogically trained middle class mothers and trained them as teachers for Head Start children. Forty-three Mexican-American and five Negro children were involved in the experiment. Thirty-six of the children were assigned to three classrooms where each classroom had three mothers teaching them. The remaining 12 went in groups of four to three mother-teacher's homes for the entire six weeks summer program. IQ tests were administered to the children the first and the sixth weeks. There were no significant differences between programs. The results showed no significant differences among the groups in children's performance.

In summary - teacher characteristics are important in determining the kinds of learning children acquire and, indeed, the kinds of social behaviors the children develop. While teachers are somewhat limited by their own biases in assessing children, their capacity to be resourceful, flexible, and supportive is important to the children's development. Further, children learn best what teachers stress most, thus, it seems important to determine what teachers plan to teach or what their teaching strengths are.

Parent Participation

From the very beginning of Project Head Start studies on parent involvement, parent characteristics, parent role in the development of children, parent education, etc. have concerned researchers. A first question pertinent at the beginning of Head Start was: What parents send their children to Head Start programs?

Several studies indicated that parents who tended to hold middle class values sent their children to the summer 1965 Head Start. Marvin Chandler (1966) compared families who sent their children with families who did not. He found the families of Head Start children had a higher educational level, used community resources more, showed more aggressiveness in terms of socilaization and were more intact than non-Head Start families. A further striking fact was that one-third of the non-Head Start families had not heard about the program.

Sherwood Chorost and others (1967) found in interviewing mothers whose children attended a summer 1965 Head Start program that their attitudes toward education were much like middle class mothers. However, Douglas and Monica Holmes (1965) found differences among parents who referred their own children as compared to parents who were "sought out" by Head Start personnel to send their children. The parents who referred their own children to Head Start held values more like the middle class than parents who were "sought out". Parents who were "sought out" but did not send their children, had low job and education aspirations for themselves and their children. One major difference, however, between the self-referred group and the sought out groups was the fact that the sought out groups had not heard about Head Start. Further, problems of transportation and baby-sitting of other children besieged both groups.

The problem of communication was a persistent one early in the program. Thus Henry Johnson and Uvaldo Palomares (1965) found that the major difference between parents who participated and those who did not involved communication. The non-participants had not been informed of Head Start. The participating families knew more about community services while the non-participating families tended to know about such services and spoke Spanish more.

Parents consistently approved of the Head Start program, rating it very high in helping their children get started in school. Philip Montez (1966) found this support among Mexican-American families. Alfonso Ortiz (1965) also found this support in an Indian community; however, the Indians wanted their own Head Start program with teachers specially trained in understanding the Indians and the materials of their native culture.

One early study reported on parents as workers in the Head Start program. Sarah Curwood (1965) found through parent interviews that parents were teacher assistants, classroom aides or room mothers, a few were working in the neighborhood as case aides, and two of the mothers had helped plan their own Center. These parents consistently expressed pleasure in being involved actively in the program. Parents who were not necessarily working in Head Start repeatedly expressed approval of the program. John Harding (1966) found the parents enthusiastic about all aspects of the program but indicated that the greatest change in their children came in the area of interest in new things. Irving Sigel and Bonnie McBane (1966) interviewed mothers of Head Start children and found general enthusiasm toward the program but with an expectation that the Head Start experience was to prepare them for school. He also found that they stressed more often than middle class mothers obedience and complicance to authority in order to get an education. Allen Soule (1965) found that most parents liked Head Start and rated social skills as the most important gain from the experience.

A number of research projects were designed to explore the impact of parents on the development of their children. George Friedlander (1965) in an early study found that the articulatory and intelligibility of language status of Spanish speaking, Negro, and white parents of Head Start children were sufficiently high to provide no serious negative influence on the children.

Mothers of Head Start children have been of particular interest to researchers especially as maternal characteristics and behaviors affect child development.

Robert Hess (1966) constructed a number of tests with Virginia Shipman to determine what maternal characteristics might predict cognitive and social abilities of their Head Start children. They found that teacher ratings and previous test performance were better predictors of children's behavior than maternal characteristics. However, the three maternal characteristics found most useful for predicting Head Start children's school achievement and Stanford-Binet scores were: (1) educational aspirations (hoped for and expected); (2) openness of mother's response to child's "difficult" questions; and (3) frequency of imperative statements to child without rationale. A later study by Robert Hess and Virginia Shipman (1967a) examined maternal behavior and attitudes to determine if they influenced their Head Start children's achievements within a middle class school setting. The children were in a summer Montessori program with predominantly middle class children. They found that mothers who were active in many things and were high in analytical behavior had a more significant positive influence on the achievement of their children. They also found that open communication between mother and child positively affected their children's achievement in school.

Sarah Hervey (1968b) compared the attitudes, expectations, and behavior of parents of Head Start and non-Head Start children and found few behavioral and attitudinal differences between the two group of parents. She did find in another study (1968a) however, that while discipline patterns were not signiticantly different for socio-economic class or sex, the low socio-economic men would be more severe in punishing anti-social and annoying behavior of their children.

Robert Bell (1967) studied aspirations of mothers in disadvantaged Negro children and found that while 73% of them wanted their children to go to college, only 23% thought it would actually happen. These mothers were generally positive about Head Start and were particularly pleased about the social development of their children. Their most pressing problems concerning child rearing centered around discipline and expenses. These mothers perceived themselves as most important to their children, and the teachers as a clear second. Fathers were generally ranked third. Bell (1968) continued his study among mothers of disadvantaged rural whites and found that they too were especially pleased with the social development of their Head Start children. They felt the impact of the teacher on their children was extremely important. These parents had very low educational aspirations for their children. About one-third claimed grade school would be all the children would have. Further, their expectations for their children when they grew up consisted mainly of being good and kind and staying out of trouble. Bell concluded that formal education for this group would come almost exclusively from the school, that neither the family nor the community would contribute much.

The studies concerned with parent participation had, for the most part, been concerned with descriptive characteristics and comparisons with non-participating parents. These studies identified some differences but generally found that non-participating parents had not heard about Head Start, especially early in the program, or were working and could not easily participate. Hazel Leler (1968) conducted a study in which she identified all the mothers who were willing to participate in the program and then controlled for the amount of time of participation. One group of mothers met several days a week and were highly involved while the other group met only once a week. Leler found that the children of the high participation mothers did significantly better on tests of achievement and development than children of the low participation mothers.

Parent involvement may be limited to attendance at meetings, occasional visits to classes, or conferences with teachers. A few studies have looked at the possibility of developing the role of parent-as-teacher in Head Start classes or at home with their children. The rationale for helping Head Start parents become "teachers" is to bridge the gap between the relatively meager learning environment of lower class homes when compared to the preacademic skills generally learned in middle class homes. Carolyn Stern, Harry Kitano and others conducted a study (1968) to determine: (1) if providing parents with materials and techniques would help them become more effective teachers of their own children; and (2) if parents who saw themselves as fulfilling a meaningful role in promoting the learning of their children would also demonstrate a marked decrease in their feelings of powerlessness and alienation in relation to the larger community.

The experimental design included four treatments: one consisted of the teacher giving materials to the parents for use at home while the teacher used the same materials in the classroom. The second consisted of the teacher using the materials in the classroom only. The third was for the teacher to provide materials to parents for their use at home, but did not use them in the classroom. And the fourth consisted of a control group in which the special materials were not used. The special materials consisted of a set of parallel picture story books and a series of programmed booklets to teach color, shape and size. Both sets of materials were developed for the University of California, Los Angeles, Preschool Language Project. The children and the mothers were given a battery of tests. The children received the PPVT, the DAM, the Parallel Production Test and tests of shape, color and size. The mothers were given the UCLA Alienation Scale.

The results showed no differences among the three experimental groups in the Parallel Production Test, but the three groups were significantly superior to the control group. On the color test, the home and school treatment was significantly superior to all other groups. While there was subjective evidence that the parents appreciated and welcomed the training program, no statistical differences were found among treatments on the UCLA Alienation Scale. There was, nevertheless, a definite and consistent trend toward decreasing feelings of alienation from society for those parents who received the instruction while the control parents remained at approximately the same level.

In summary - parents generally approve of Head Start and see its value for their children. Their involvement in Head Start ranges from a high degree of enthusiastic participation to a passive indifference with some element of suspicion. However, when parents who wish to participate in the Head Start program are controlled, for research purposes, in the amount of participation time, significant differences result. The children of parents who have a high level of participation perform better on tests of achievement and development. In addition, parents who duplicate in the home special learning activities in the classroom and who are trained in the teaching techniques, enhance the learning of their children more than parents teaching without this duplication or with the learning activities confined to the classroom.

Head Start and the Community

The earlier studies of Head Start in a community setting were concerned with the feelings of persons in the community about aspects of Head Start and the differences among persons in varying community settings. Alfonso Ortiz (1965) studied a Head Start project in an Indian community using interviews with well-informed parents and tribal leaders, local teachers, and a clergyman. The predominant theme was that while Head Start was a desirable project, the Indians wanted their own Head Start program, with teachers specifically trained in understanding the Indians and materials on their native culture. Further, they wanted a full year program.

Another study involving Negroes, Puerto Ricans, and other whites, reported different findings concerning ethnicity of teachers. Max Wolff and Annie Stein (1966b) found that about one-fourth of the Negro parents interviewed thought it was either "very important" or "good but not necessary" to have a Negro teacher for their children. More than half of the Puerto Rican parents, however, felt it important to have a Spanish speaking teacher for their children. In terms of the effect of segregation and integration, the majority of both Negro and Puerto Rican parents in the segregated public schools thought it made no difference to the quality of the schools. In the integrated or mixed schools, however, nearly forty percent of the Negroes, twenty percent of the Puerto Ricans and over forty percent of the other whites thought this mixture made for a better school. Close to thirty percent of both the Negro and Puerto Rican parents stated that education in segregated schools is necessarily poorer.

Allen Soule (1965) studied a small community which had a Head Start program of 47 children to determine if the project was fulfilling community needs. He established that the enrollment represented the deprived children of the community and that their parents were generally satisfied with the Head Start experience. Minor complaints related to more discipline, more preparation for public school, and help with transportation.

Robert Rice (1965) looked at the housing environment as a factor in children's performance. He compared Head Start children from public housing, Head Start children from slum housing, non-Head Start children from public housing, and non-Head Start children from slum housing. He conducted parent interviews and administered the Preschool Inventory to the children at the end of a three month Head Start program.

Significant differences in conditions favored public housing groups. Both slum housing groups showed larger households, more overcrowding and lower standards of cleanliness. However, within the slum housing groups the Head Starters had more favorable conditions. Non-Head Start children from public housing had the largest number of father-absent homes while Head Start children from slum housing had the fewest number of father-absent homes and relative stability of residence. In terms of children's performance on the Preschool Inventory, the children who attended Head Start, regardless of housing conditions, did significantly better than the non-Head Start children. Housing conditions did not seem to be a determinant for the children to benefit from the Head Start experience.

Philip Montez (1966) studies the characteristics of a group of

Mexican-American families whose children attended Head Start. He found the families to be quite stable. Sixty percent had been born in this country and two-thirds had lived in the same county for more than two years. Almost half of the mothers and more than half of the fathers had not gone beyond the sixth grade. Most of the men worked in labor type jobs and few of the mothers were employed. These parents rated the Head Start program very high. Of the auxillary services, they rated medical service highest and psychological service lowest. Generally they did not know about the availability of psychological services. Seventy percent of the parents learned about Head Start through a Head Start worker or school contact. Mothers showed greater concern than fathers about their children's future difficulties in school and need for help. This concern increased as her educational level was higher. An important finding was that 209 of the 273 parents interviewed said they would be interested in joining a group concerned with the education of their children.

Increased concern for relationships among staff members within a Head Start Center and relationships between Center personnel and the community have stimulated a few studies supported by the Research and Evaluation Office. One of these concerns the work relations between professionals and paraprofessionals and was conducted by Claire Jacobson (1968). She posited that since the beginning of Head Start, the indigenous poor have been employed as paraprofessionals in increasing numbers. The major purposes for their use have been: (1) to break down the impersonality and distance between the professional and the families by interposing a mediating person closely related in background to the families; and (2) to provide an institutional means for the poor to help themselves through work and the opportunities it gives for the development of skills, knowledge and self-confidence. The achievement of these outcomes is dependent on the kind of work relations which develop between paraprofessionals and professionals.

The Centers studied in this research were comprised of professionals who had most of their experience working alone and paraprofessionals who were indigenous poor persons who had little or no work experience. The aspects of the relationship studied were: (1) allocation of functions; (2) the use of the paraprofessionals as a bridge between the professionals and the families; (3) professional authority; (4) the emergence of work identify and a work ethnic; and (5) the internal mobility of the paraprofessional within the Head Start organization.

The report presents evidence to the role ambiguity of the paraprofessionals; i.e., teacher aides and social work aides. They did not perform as mediators between professionals and the clientele, rather the professional went directly to the families. The social work aides tended to bypass or avoid professional authority, feeling they knew how to handle the problems alone. There were different patterns of work identify among different staff personnel, but a great deal of difficulty in developing an autonomous paraprofessional identity was found. Further, there was failure to conform to a "work ethic" by the paraprofessional and there were serious problems of mobility for them. The career ladders concept did not seem to be functioning.

Another study examined the problems and dynamics of the collaboration of university professionals with inner-city and suburban community leaders and parents when a Center for diagnosis and treatment of behavioral disturbance was being established for Head Start children. Caroline Fish, Frank Garfunkel, Pierre Johannet, and Mae Upperman (1968) had planned to use a professional team in the diagnostic and treatment Center and to establish the Center on a university campus.

It soon became clear that the inner-city community would not participate in such a program unless they were directly involved and unless the Center were moved into their community. The Center activities were moved accordingly. In addition the professional team was expanded to include, as active collaborators, not only parents but a number of key persons from the communities, inner-city and suburban involved in the Center. All participants were encouraged to formulate a fresh conception of what could be achieved in a given community by a more inclusive and coordinated effort.

The changing mood of the inner-city community was from one of passive acceptance of aid to one of aggressive independence with a demand for autonomy. The changing mood of the suburban community caused by rapid changes in the neighborhood, was from a sense of strength to a feeling of a breaking up of an old solidarity. The changes in the communities affected the kinds of diagnostic findings among the children to such an extent that a new model for investigation was formed. The interest now was in the integrated concept of community-family, not the family-child unit as the source of understanding deviant behavior of children.

Social psychology was drawn on to develop a group of cooperative persons from the community and from the university who could work together on establishing and maintaining an effective Center for the diagnosis and treatment of deviant Head Start children. The theoretical position of Leon Festinger (A Theory of Cognitive Dissonance, Stanford University Press Stanford, California, 1957), was used. It posits that discomfort or dissonance is produced by a previous awareness of the existence in ones' mind of two or more opposing, conflicting, inconsistent beliefs, opinions, values or aims. Further, the person resorts to a number of mental maneuvers to diminish the existing dissonance and thereby to approach a sufficiently comfortable state of consonance. Festinger's basic hypothesis is that the existence of this discomfort or dissonance being psychologically uncomfortable, will motivate a group to try to reduce dissonance and achieve consonance.

The study drew on the status inbalance between professionals and the community participants as a major source of dissonance. As community leaders were drawn in or employed as senior consultants, they worked closely with university staff recruiting other individuals from the community and initiating dialogues on the total educational and mental health processes in the community.

Once involved with these community consultants the team of professionals began to lose some of their professional identity and immerse themselves more deeply in community problems. At the same time the community people began to identify themselves as professionals in professional roles. As a result of this new emerging concept of professionalism the boundaries of traditional professions were diffused and professionalism became associated with proficiency and knowledge in producing programmatic activity.

Much of the dissonance between parents and professionals was resolved by moving the Center into the inner-city and involving parents who now felt free to participate. Interestingly, the suburban community raised no objections to the new location in the heart of the city, in spite of difficulties in transportation and the inherent difficulties of bringing middle class children into the ghetto. Each side, once they were committed to the program, began to see in the other group things they liked and to readjust prior biases.

In summary - various communities favored Head Start while expressing different views on ethnicity of teachers and the comparative merits and weakness of segregated and integrated Head Start classes. Variations in Head Start auxiliary services generally affected the rural communities or groups that did not know about them. Housing was not a significant factor in children's performance while attendance in Head Start program was.

More recent studies are examining the relationships of Head Start personnel, many professionals and community leaders. In one study paraprofessionals did not seem to be performing tasks they were engaged to perform and were at conflict with the professionals. In another study the professionals, parents, and community leaders confronted each other over a period of time and resolved much of their dissonance in favor of consonance for the benefit of the children who were referred to a diagnostic and treatment Center for Head Start children.

Follow-Up

An important question asked about Head Start is: Does Head Start have a lasting effect on children who participate? This question assumes Head Start has an impact on the participating children. The literature on the impact of Head Start is reviewed in earlier sections of this report, but a brief review is presented here as the context for the follow-up studies.

The studies on the impact of summer 1965 Head Start suggested rather consistently that the experience had a significantly positive effect on measured performance of children. Intelligence measures improved significantly but did not reach the middle class norms. (Chesteen, 1966; Eisenberg, et.al., 1966; Hodes, 1965; Berlin, 1965; Horowitz & Rosenfeld, 1966; Cawley, 1966; Berger, 1965; Harding, 1966; Pierce-Jones, et.al., 1966).

Judith Jensen and Lawrence Kohlberg (1966) and Kuno Beller (1967) established the same pattern for a full year Head Start (1966); however, Alexander (1968b) and Faust (1968) found that after a full year Head Start, the children achieved the national average on the Stanford-Binet, i.e., performed as middle class children.

In the areas of attitudes, motivation, and social behavior, there is fairly uniform evidence that Head Start produced immediately apparent changes. The primary source of this evidence is in teacher ratings of children (Berlin, 1965; Harding, 1966), since other measures did not prove reliable (Harding, 1966; Hess, 1966; Chorost, Goldsteing & Silberstein, 1967). The available evidence suggests that children showed more socially appropriate behavior following their experience in Head Start, especially in terms of increased interest in new things (Harding, 1966; Soule, 1965), improved adult-child interaction patterns (Harding, 1966), increased task orientation (Horowitz & Rosenfeld, 1966; Ozer, 1965), improved attitude toward learning (Beller, 1968a), improved self-concept, decreased alienation from authority, and increased trust of others (Lamb, Ziller & Maloney, 1965). Jensen and Kohlberg (1966) reported decreased task orientation but increased social interaction with the tester during Binet testing of the children early and late in their Head Start experience.

While the evidence is quite consistent concerning the impact of a Head Start program, the evidence is more contradictory concerning the long range of impact of Head Start. These contradictions have encouraged testing a number of hypotheses concerned with length of Head Start experience, role of the teacher, type of program, parent involvement, and experiences after Head Start.

The consistent findings in follow-up studies are in areas other than cognitive development. Thus, Head Start children remained superior in teacher judgments in achievement, independence, verbal participation, and lack of timidity (Hess, 1966), as well as ratings of attractiveness of personality, compliance with routine, and response to authority (Krider & Petsche, 1967), in observations of attention span, positive emotion, and responsiveness (Holmes & Holmes, 1966). Only two studies, both based on evaluations of the same Head Start program yielded contradicting evidence. When children from this particular Head Start program enterd public school, they were judged by their teachers as harder to manage (Van Egmond, Miller, Jackanicz, & Cheong, 1966), and as less verbal, more shy, and less persistent in tasks (Porter, 1965).

The inconsistent findings in follow-up studies are in the cognitive area and in measured intelligence. The studies indicate rather uniformly that while Head Start children do not lose what they have gained through their Head Start experience, they tend to level off to a plateau which allows other children to catch up to them (Wolff & Stein, 1966a; Hess, 1966; Allerhand, 1967; Eisenberg, 1966; Hodes, 1966; Holmes & Holmes, 1965; Krider & Petsche, 1967; Morris & Morris, 1966; Jense & Kohlberg, 1966; Chesteen, 1966; Chorost, Goldstein & Silberstein, 1967; and Pierce-Jones, et.al., 1966).

Follow-up of the 1965 summer Head Start children and follow-up of other summer programs as well as full year programs continue to provide variability of results, especially when program differences or special conditions are identified. Thus, Head Start children who enter a middle class public school appear to sustain their advantage over non-Head Starters, whereas similar Head Starters who go into a slum school do not (Hyman & Kliman, 1967). Other studies have found that children who parents were voluntary participants in Head Start programs sustained their gains better than children whose parents had been actively recruited for participation in the program (Holmes & Holmes, 1966), or children of parents who had a high level of participation retained their gains better than children of parents who did not have a high level of participation in Head Start (Bittner, et.al., 1968).

Marvin Cline and Marguerite Dickey (1968) followed-up a group of Head Start children from a summer 1966 program and found no significant differences from children who had no Head Start experience in any intelligence or achievement tests at the end of the kindergarten year. On the other hand, Kuno Beller (1968a) found that children who had a pre-school experience scored higher on the Stanford-Binet and Draw-A-Man Test at the end of first grade than children who had no pre-school or kindergarten experience. Further, he found that children who had any pre-school experience, whether nursery or kindergarten, achieved significantly higher grades in arithmetic, reading and writing than children who entered first grade with no prior education. This same pattern was evident from the first report cards of the second grade. Beller was following up a full year program, Cline a summer program.

Irving Sigel (1966) suggested a latent effect of the Head Start experience when he found that Head Start children did not differ significantly from non-Head Start children at the beginning of kindergarten, but did differ at the end of kindergarten. He suggested that something in the Head Start experience enabled children to assimilate new information in kindergarten. W.G. Steglich and W.J. Cartwright (1967) found no significant differences in a follow-up of Head Start summer 1965 children and controls at the end of first grade. However, they found slight increases in the number of superior Head Start children at the end of second grade. James Hubbard (1967) also found greater gains at the end of the second grade than at the end of the first grade, especially in oral language ability of Head Start children. In reading, however, he found little difference between Head Start chioldren and non-Head Start children. At the end of first grade there were differences between the two groups in reading, but essentially none in the second. The so-called latent effect may be more a function of what kinds of programs children enter after Head Start than of the Head Start experience.

David Waller (1968) followed-up a group from the 1965 summer Head Start experience using the PPVT and the Draw-A-Person tests. He found the scores of Head Start children were higher than the controls at the beginning of kindergarten. Both groups made significant gains during kindergarten but the end of the year scores showed a narrowing of the difference in the PPVT and absence of differences in the DAP.

One small intervention study by Norman Silberberg, et.al. (1968) found that training kindergarten children (these were middle class children) in learning the alphabet and numbers did permit the trained children to recognize numbers and letters at a higher level than the untrained children. The beneficial effects of the kindergarten training, however, were dissipated by the end of first grade.

Marguerite Bittner, et.al. (1968) found at the beginning of first grade that children who had a full year of preschool did better in tests such as the PPVt, the Preschool Inventory, and the Metropolitan Reading Test than children who attended only a summer Head Start program, attended none, or were from a middle income group with no preschool experience. However, this initial superior performance of the full year preschool children was not maintained over the year and was no longer significant by the end of the year. It was found in this study that children whose parents did not participate in the programs demonstrated the poorest test performance. It was this discovery which lead to the study on level of parent participation reported in the section on Parent Participation.

A number of follow-up studies have been part of special programs and demonstrations.

Vernon Van de Riet (1967) compared groups of culturally deprived preschool children who were trained in the Sprigle sequential learning program with children in a "traditional" preschool program and children in no preschool program. The Sprigle group performed better than the other two groups at the end of the preschool experience on the Stanford-Binet, PPVT, Bender-Gestalt, ITPA, and Metropolitan Reading Readiness. The traditional group tested significantly higher than the no education group. By the end of first grade, however, while the Sprigle children performed significantly better than the no education group, the differences between the traditional group and the no education group had begun to disappear. The children with any preschool education, nevertheless, were superior academically to children without such experiences.

The groups were rated similarly by the teachers on ability to get along with others and overall discipline, thus providing some evidence that cognitive development does not have to occur at the expense of social and emotional adjustment.

Susan Gray (1967) reporting on five years of The Early Training Project (also referred to as DARCEE) followed a group of children who had various experiences in the Project from the mean age of 3 years 9 months to 8 years 9 months to determine the long range impact of the Early Training Project after the children entered public school. The findings clearly substantiate a positive effect of the Project that was sustained through the last assessment period, at the end of the second year of public schooling. The experimental children were consistenly superior in the Stanford-Binet and the WISC. On the two tests of language, the PPVT and the ITPA, the experimentals were superior to the controls, although in the second year of public schooling, the advantage on the ITPA was lost. Reading readiness tests favored the experimental children, and between one-third and one-half of the achievement sub-test scores favored the experimental children.

Martin Deutsch (1968) held the experimental children within the program at the Institute for Developmental Studies and does not yet have data on the performance of children who recently left the program to enter regular fourth grade classes. The children who remain in the program continue to gain in performance tasks with each new group starting the program making greater gains over the same amount of time as previous groups. The program personnel has learned much from its focus on continued research and uses the research findings to feed back into the program.

In summary - whether children maintain their advantage after a Head Start experience seems to depend, then, on length and type of Head Start program, appropriateness of learning experiences, and level of parent participation. Another source of evidence comes from the kinds of teachers involved with Head Start children during the experience and in grades subsequent to the Head Start experience. It may well be that the improved training of teachers combined with improved Head Start programs and increased time in programs account for the more recent findings by Alexander and Faust (see above) that Head Start children do indeed function as middle class children in terms of learning readiness after a full year Head Start program.

Research Directions

The need for continued research in each area presented in this report is clear. The few years of Head Start research have yielded some important findings, but the magnitude of the program and the complexity of the variables needing research require continued efforts. The areas of Parent Participation and the Community have fewer research reports than some of the other areas largely because of the difficulty of conducting research in these two areas. There is, however, an increasing number of studies focusing on these areas.

One area not included at all in this report concerns research in health and nutrition. Its omission is not because of lack of recognition of its importance but because of the submission of few research proposals.

Several studies are now in progress in this area and one has been completed. It was not presented in a separate section since no other studies could accompany it. The study, conducted by Nancy Munro (1968), concerned the relationship between hemoglobin level and intellectual functioning of Head Start children. She found that changes in hemoglobin levels among those children who began with low levels and increased, were associated with increased intelligence scores. While decreases of high hemoglobin levels were associated with decreases in IQ, this association was not significant. Munro suggested that the effects of decreases may manifest themselves more slowly than the effects of increases.

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